Methods: In 18 patients sp-RNA was performed after completion of routine p-RNA. Twelve patients were treated with cardiotoxic agents, 5 patients were known with a previous myocardial infarction, 1 patient was known with dilated cardiomyopathy. For sp-RNA a 3-head gamma camera was used. After filtering of data short, horizontal long and vertical long axes were reconstructed from 2 pixel thick transversal slices. SPECT EFs were assessed by applying a 35% threshold to a region containing the LV. On pl-RNA and sp-RNA studies regional wall motion (normal, hypo-, a- or dyskinesia) was visually assessed in 7 myocardial segments. For the assessment of intra- and inter observer variability sp-RNA EF measurements were performed twice by the same observer and once by a second observer.

Results: On pl-RNA wall motion abnormalities were observed in 12 segments (sgm). On a-RNA 15 sgm were considered abnormal. In 9 sgm abnormalities were considered more severe on sp-RNA than on pl-RNA. In the 12 patients treated with cardiotoxic agents no wall motion abnormalities were observed.

There was a linear relationship between pl-RNA and sp-RNA EF measurements ($y = x + 5.8$; $r = 0.83$; SEE = 8.0). The intra-, and inter-observer variabilities were 1.9% ± 2.8 and 3.2% ± 2.0% respectively.

Conclusion: sp-RNA is an accurate method for the assessment of LV function. The gain of SPECT in RNA is the improved detection of regional wall motion abnormalities.

1233-166 Dobutamine gated-SPECT, thallium-SPECT and Dobutamine Stress Echocardiography to Assess Myocardial Viability

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Aim: 1/ Accuracy of MIBI-Quantitative-Gated-SPECT (QG-SPECT) during dobutamine infusion, to assess myocardial viability determined by dobutamine stress echocardiography. 2/ Comparison of QG-SPECT data, LV volume, ejection fraction (LVEF), wall motion and thickening, with echocardiography and LV angiogram.

Methods: a double head rotated gamma camera (HELIX-ELSCINT with Cedars Sinai software) was used to perform QG-SPECT. 12 pts had myocardial viability studied by Thallium-SPECT and during dobutamine infusion (10 $\mu g.kg^{-1}.mn^{-1}$) by QG-SPECT and stress echocardiography (dobu-echo). 37 pts got QG-SPECT with echocardiography and coronary angiography.

Results: 1/ QG-SPECT overvalues basal LV volumes (diast. +12%, syst. +33%) and underrates LVEF (-20%). During dobutamine infusion, LVEF changes are well correlated with echocardiography data ($r = 0.88$). 2/ Kinetic abnormalities of LV angiograms are well detected by echocardiography (sens. 94%, spec. 87%). QG-SPECT detection accuracy is lower (sens = 92%, spec = 50%). 3/ QG-SPECT is better than thallium-SPECT to detect a myocardial viability in infarction area.

Viability diagnosis/dobu-echo	Sens.	Spec.	PPV	NPV
Basal + redistribution Tl-SPECT	25%	100%	100%	33%
Dobu-G-SPECT motion	88%	50%	78%	67%
Dobu-G-SPECT thickening	75%	75%	86%	60%

Conclusion: QG-SPECT is a quantitative automatic method. It is feasible during a dobutamine infusion. Dobutamine QG-SPECT is a new way to assess myocardial viability.

1234 Peripheral Artery Disease

Wednesday, April 1, 1998, 3:00 p.m.–5:00 p.m.
Georgia World Congress Center, West Exhibit Hall Level
Presentation Hour: 4:00 p.m.–5:00 p.m.

1234-47 Association of Accelerated Atherosclerosis and Myocardial Hypertrophy With Systemic Lupus Erythematosus

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Background: Clinical evidence of premature vascular disease (stroke and myocardial infarction) has been reported in systemic lupus erythematosus (SLE) and antiphospholipid antibody syndrome (APLA) and has been attributed to an increase in conventional atherosclerosis risk factors and/or prednisone use.

Methods: Preclinical evidence of vascular and myocardial disease was evaluated using carotid and cardiac ultrasound in 18 patients with SLE and 4 with primary APLA and compared to findings in 44 control subjects matched for age (mean = 41 years), gender (100% female) and race and to the presence of risk factors.

Results: Patients were comparable to controls in blood pressure, total and HDL cholesterol, and smoking history but tended to be obese (body mass index 29.3 vs. 25.2 kg/m^2, $p \approx 0.05$). Prevalence of carotid plaque was higher in patients (41 vs 9%, $p < 0.005$) as was left ventricular (LV) mass adjusted for obesity (40.3 vs 31.6 $gm/m^{2.7}$, $p < 0.005$). Furthermore there were no differences between patients with and without plaque in conventional risk factors or use of prednisone. Plaque and/or LV hypertrophy was present in 5/7 patients with clinical cardiovascular disease.

Conclusions: Preclinical cardiovascular disease is very common in SLE and APLA and is not explained by traditional risk factors or steroid use, suggesting that inflammation *per se* may be of primary importance.

1234-48 Assessing Cardiac Risk of Vascular Surgery: A Simple Bayesian Model Using Clinical Markers and Results of Preoperative Dobutamine Echocardiography

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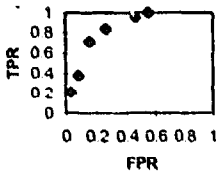
Background: We sought to validate a simple Bayesian model of assessing risk of postop cardiac death or MI in vascular surgery. We examined the use of dobutamine stress echo (DE) results to replace dipyridamole-thallium scintigraphy (DTHAL) as the diagnostic for computing a secondary risk score.

Methods: Data were collected for 340 patients (PTS) including clinical and stress test markers identified by L'Italien. A logistic model incorporated age >70 years, angina, history of MI, diabetes mellitus (DM), history of congestive heart failure (CHF) and prior revascularization to obtain clinical risk estimates. We added DE results (i.e. fixed and reversible wall motion and ST changes) to create a second logistic model. Comparison of observed and predicted estimates of cardiac events and receiver operating characteristics (ROC) curves were used to assess the models.

Results: The postop cardiac event rate was 7% (24/340). The event rate estimated from the clinical model was 5.6%; adding DE findings predicted an event rate of 7.4%. The observed event rate in PTS classified by clinical data as low (0–5%), moderate (>5–15%), or high risk (>15%) were 3.7%, 10.6%, and 14.3%. Adding DE results reclassified PTS from all categories, with the observed event rate in low, moderate or high risk PTS of 1.7%, 7.0% and 25.5%. The ROC curve (area >80%) for adverse event prediction using both models is shown indicating excellent discrimination.



Conclusion: We validated a Bayesian method for assessing cardiac risk in vascular surgery. The use of DE to replace DTHAL did not reduce the precision of the model. The clinical model is reliable in a majority of PTS; while DE can help to further refine risk prediction for specific clinical risk cohorts.

1234-49 Correlation Between pre and Intraoperative Myocardial Ischemia in Patients Undergoing Major Vascular Surgery Detected by Dobutamine Stress Echocardiography and Continuous 12-Lead Electrocardiography

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Aim of the Study: To compare myocardial ischemia detected preoperatively with dobutamine stress echocardiography (DSE) with intraoperative ischemia using continuous 12-lead ECG (Eli-100 ST) (ECG) monitoring in pts undergoing major vascular surgery.

Methods: DSE was used in 58 pts for the presence and location of stress induced ischemia (NWMA). ECG monitoring started 12 hr before up to 36 hr after surgery. In order to analyse the "ischemic burden" and location (anterior, lateral, inferior, and posterior), an algorithm was used for the detection and quantification of ischemic ST-episodes in each of the 12-leads ECG separately. Total ischemic burden was calculated as the total duration of ST-episodes (min) per pt and the summated areas (severity) under the curves of the 12-leads episodes (μV.min).

Results: ECG ischemia was preceded by a mean heart rate increment of 51%. DSE and ECG showed ischemia in 13/56 and 25/56 pts. The agreement